



The impact of climate on the disease dynamics of cholera

Author(s): Koelle K
Year: 2009
Journal: Clinical Microbiology and Infection : The Official Publication of The European Society of Clinical Microbiology and Infectious Diseases. 15 (Suppl 1): 29-31

Abstract:

The size of infectious disease outbreaks frequently depends on climate influences as well as on the level of immunity in the host population. This is particularly the case with vectorborne and waterborne diseases, for which pathogen transmissibility critically depends on ecological conditions. Here, a mathematical model that was applied to the bacterium *Vibrio cholerae* to understand its disease dynamics in Bangladesh is reviewed. When interfaced with empirical case data on cholera, the model shows that climate plays a pivotal role in modulating the size of outbreaks, with local, regional, and global indices of climate variability showing a link with pathogen transmissibility. Furthermore, the incidence of cholera may occasionally be surprisingly low at times when climate seems to favour cholera transmission.

Source: <http://dx.doi.org/10.1111/j.1469-0691.2008.02686.x>

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Asia

Asian Region/Country: Other Asian Country

Other Asian Country: Bangladesh

Health Impact:

specification of health effect or disease related to climate change exposure

Climate Change and Human Health Literature Portal

Infectious Disease

Infectious Disease: Foodborne/Waterborne Disease, Vectorborne Disease

Foodborne/Waterborne Disease: Cholera

Mitigation/Adaptation: ☒

mitigation or adaptation strategy is a focus of resource

Adaptation

Model/Methodology: ☒

type of model used or methodology development is a focus of resource

Outcome Change Prediction

Resource Type: ☒

format or standard characteristic of resource

Review

Timescale: ☒

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☒

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content